Small Business Innovation Research/Small Business Tech Transfer

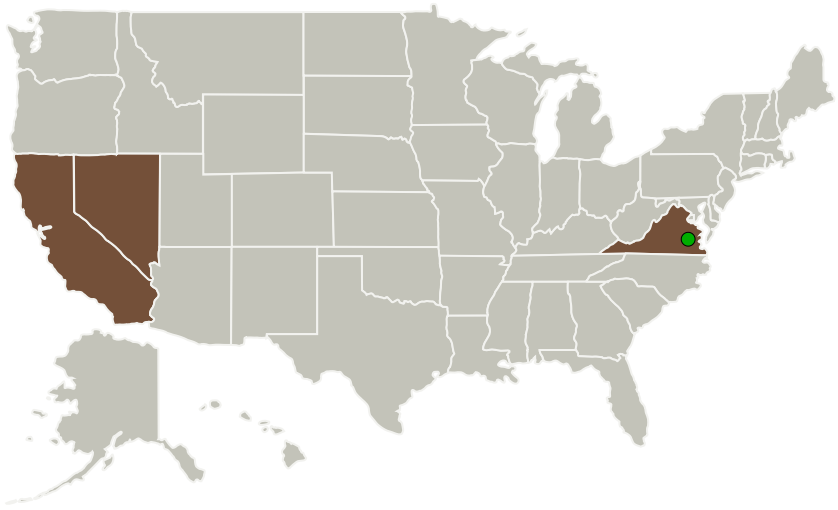
Ionic Polymer-Based Removable and Charge-Dissipative Coatings for Space Electronic Applications, Phase I

Completed Technology Project (2011 - 2012)

Project Introduction

Protection of critical electronic systems in spacecraft and satellites is imperative for NASA's future missions to high-energy, outer-planet environments. The objective of this project is to develop flexible, transparent, and removable conformal coatings to protect delicate, mission-critical electronic components from electrostatic discharge damage. In collaboration with our partners, InnoSense LLC (ISL) proposes to develop a Transparent Conformal Conductive Coating that will meet the needs of NASA's space programs. The transparent conformal coatings will consist of a flexible and low-water-absorbing polymer matrix blended with conductive polymers. Phase I tasks focus on (1) preparing conductive polymers and conformal coating formulations, (2) developing coating and curing processes, and (3) testing conformal coatings with respect to adhesion, UV resistance, offgassing, resistivity, charge dissipation, ease of removal, and resistance to temperature cycling and vacuum.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Innosense, LLC	Lead Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB)	Torrance, California
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia
University of Nevada-Las Vegas(UNLV)	Supporting Organization	Academia	Las Vegas, Nevada

Primary U.S. Work Locations	
California	Nevada
Virginia	

Project Transitions

February 2011: Project Start

February 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139141)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Innosense, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

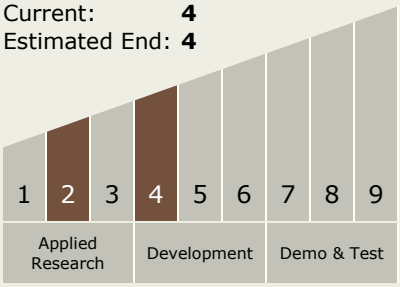
Carlos Torrez

Principal Investigator:

Linden Bolisay

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.1 Materials
    - TX12.1.5 Coatings

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System